





DoD International AIMS Program



AIR TRAFFIC CONTROL RADAR BEACON SYSTEM
IDENTIFICATION FRIEND OR FOE
MARK XII/MKIIA SYSTEMS
SYSTEMS

Ray Campbell
Senior Program Analyst
DoD International AIMS Program Office
Robins AFB, GA

USAF Mode 5
Mar 2004



OVERVIEW



- **AIMS Program**
- **Program Mission**
- **AIMS Certification**
- **Mark XIIA (MODE 5)**
- **Mode 4 Crypto Decertification**



DoD International AIMS Program



- DoD Directed, USAF Lead Service, SAF/AQID, WR-ALC/LS
- Single Manager/OPR for DoD AIMS Architecture
 - Military Mark XII/XIIA CID and ATC Systems
- Program Decision Points
 - Ongoing Support for AIMS Development, Acquisition, Integration, Operation
 - Terminate When There is no Military Operational Requirement for Mark XII/XIIA Systems
 - Recent Decision Points
 - Improved Mark XII Cooperative Identification Capability Navy Joint Interest ORD Mar 2001
 - AF/XO USAF IFF Requirements for Mode 5 May 2002
 - Mark XII Identification Friend or Foe (IFF) Moratorium (SAF/AQ) 14 Apr 2003



AIMS Program Office Mission



- Maintain Overall System Level Integrity of DoD Mark XII Systems and Sub-Systems
- Development and Implementation of Mark XII/XIIA IFF Performance Standards, SCG, Handbooks, and Test Plans
- Resolve Operational, Security and Interoperability Problems
- Support all DoD Users Services, FAA, NSA, DOT, Industry, NATO, and other International Communities
- Manage Proliferation of IFF Equipment
- Provide USERS with Technical Assistance
- Plan and Chair Yearly Interservice AIMS User Conferences



AIMS Program Office Mission



- Manage DoD ICAO (Mode S) Codes
- Represent DoD to NATO IFF Technical Working Groups
 - Assuring US Positions are Promulgated to NATO STANAG
- Provide Independent Oversight/Verification/Approval and Certification for New Developments and Improvements
- Assure Performance, Interoperability, Classification



AIMS CERTIFICATION



- Certification to DoD AIMS performance and IFF interoperability standards required for all military platforms
 - Improves operational effectiveness
 - Combat identification
 - Air traffic management
 - Reduces risk of fratricide
 - Reduces risk of air incident
- AIMS PO verifies performance, issues certification
 - Supports JTTC Certification
 - Supports frequency allocation and approval process



AIMS

Certification Requirement



- Certification to DoD AIMS Performance and Interoperability Required for all Military Platforms
 - DoD AIMS PMP
 - SAF/AQ Moratorium Letter
 - MILDEP Frequency Managers
 - FAA
 - JITC
 - JTA Mandated Requirement
 - MOA (In Work)
- AIMS PO Verifies Performance and Provides IFF Certification



Certification (Cont)

Box Level Process



- AIMS involvement in technical reviews, and performance/operational testing
 - Ensures JTTC is kept cognizant of the AIMS team evaluation activities
- AIMS provides inputs to required documents and testing
 - Specification, qualification test plan and procedures, qualification testing, and test reports
- AIMS PO provides engineering input and helps to mitigate problems
- Problems resolved with software/hardware modification or required operational procedure
- AIMS PO issues an AIMS box level certification decision
- AIMS PO provide copy of certification and test summary to JTTC



Certification (Cont) Platform Process



- AIMS PO involvement in integration and test effort
 - Ground and flight test
- Ensure minimum control and indicator requirements are met
- Assist with problem resolution
- AIMS PO evaluates installed performance
- AIMS issues platform certification decision for AIMS minimum installed performance and interoperability
- AIMS PO provide copy of certification and test summary to JTTC



Mode 5 Levels of Operation



Currently Defined Capabilities:

Level 1: Question and Answer Identification*

* Minimum required for Mode 5 capability

Growth:

Level 2: Position Reporting

Extended Growth Capabilities:

Level 3: Selective Interrogation

Level 4: Extended Data



Mode 5 Standards Development



- DoD AIMS PO Same Responsibilities for Mark XIIA as Mark XII
- The DoD AIMS PO and PMA-213 Co-Chair IPT
 - Shared Responsibility for Mark XIIA Standards Development
 - Shared Decision Role for Mode 5 Issues
 - AIMS PO and PMA-213 IPT Charter
 - AIMS PO Decision Maker for Mode 4 Issues
- IPT Product is Revised DoD AIMS Standards
 - DoD AIMS 03-1000
 - Includes Four New Addenda
 - Approved Mar 03 by PMA-213 and DoD AIMS PO
 - AIMS PO Responsible for Distribution and Future Changes After IPT
 - DoD AIMS 04-900 (in work)
 - Draft Mar 04, Final Apr 04
 - Test Standards For Transponders and Interrogators (in work)
 - Sep 04 ??? Meeting at Pax River 19 Feb 04



AIMS Program Office Mark XIIA Responsibilities



- Configuration Control
 - Ensure All Upgrades Meet a Defined Minimum Level of Performance for Security, Compatibility, Interoperability and Operational Effectiveness
- Develop Mode 5 Update to Mode 4 Handbook
 - Mark XIIA Handbook
- Independent Oversight/Verification/Approval-Certification
 - Design, Testing, Integration
 - Operational Performance
 - Critical to Interoperability and Performance
- Support AIMS Community
 - Managers, Operators, Maintainers, Industry
- Support International Mark XII/XIIA Activities



DoD International AIMS Personnel



- Victor Hunsicker Program Manager (478) 926-3113 victor.hunsicker@robins.af.mil
- AIMS WEB SITE <https://wwwmil.robins.af.mil/ls/AIMS.asp>
- **AIMS CONFERENCE** **MARCH 22-26, PANAMA CITY**

DOD AIMS PROGRAM OFFICE
380 RICHARD RAY BLVD STE 104
ROBINS AFB GA 31098-1638